Acta orthop. scand. *49*, 95–97, 1978

INTRAOSSEOUS LIPOMA

A Report of Two Cases

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Intraosseous lipoma seems to be a rare condition as only some 20 cases have been reported so far. A further two cases are described the lesions being in the calcaneus and in the tibia. Radiographically the lesions appeared osteolytic and well delineated, containing calcified areas. The microscopic features were those of mature adipose tissue. Curettage and packing with autogenous bone grafts is recommended, if the lesion causes pain or a correct diagnosis cannot otherwise be obtained.

Key words: bone tumour; intraosseous lipoma; lipoma

Accepted 16.viii.77

Lipoma, being one of the most common soft tissue tumours, and predominantly located subcutaneously, is rarely observed within bones. Recently a report of a case of intraosseous lipoma of the calcaneus was published in this journal (Poussa & Holmström 1976) together with a review of the literature. Altogether some 20 cases of intraosseous lipoma have been reported by different authors since 1910. This report describes a further two cases and briefly presents the clinical, radiographic and pathologic-anatomic appearances.

CASE REPORTS

Case 1. A 44-year-old woman sought medical care in April 1976 because of pain in her right heel and leg over a period of 5 months. There was no history of trauma. The pain became worse during walking and sometimes she noticed a slight swelling of the lateral aspect of her heel.

Radiography revealed an osteolytic, cyst-like, ovoid lesion with a maximum diameter of 2.5 cm, in the middle and lateral part of the calcaneus (Figure 1). The lesion had a small sclerotic central area and was sharply delineated by a thin sclerotic margin. The radiologic diagnosis was benign bone cyst.

Curettage was performed and the defect was packed with autogenous bone grafts.

Grossly the specimen consisted of yellow,

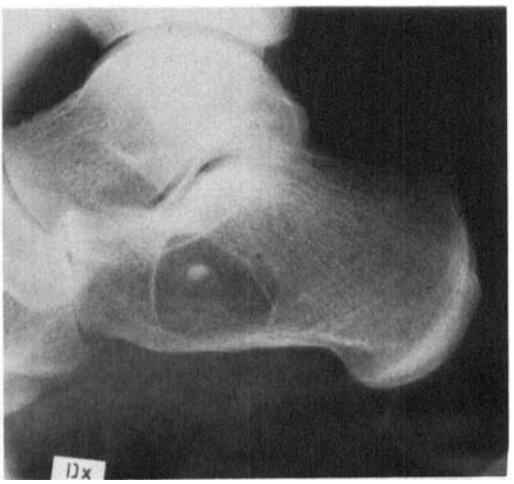

Figure 1. Case 1. Radiograph showing a well-delineated osteolytic lesion with a small central dense area within the right calcaneus.

fragmented adipose tissue and a small amount of fatty fluid.

The *histologic examination* revealed fragments of mature adipose tissue made up of univacuolated fat cells, varying only slightly in size and without nuclear or cellular pleomorphism. In places the adipose tissue showed regressive changes with small groups of foam cells, fibrosis and one fragment also included deposits of calcium.

At follow-up 13 months postoperatively the patient had no complaints except for slight tenderness at the site of the heel incision. Radiograms showed bone replacement of the lesion.

Case 2. A 23-year-old woman experienced sudden pain in her left leg in December 1973, 6 months prior to admission. She could not recall any trauma. During the following months the ache persisted and was accentuated during and after walking. Also a moderate swelling of the ankle and foot was observed.

Radiography in January 1974 revealed an ovoid lytic lesion in the distal part of the tibia, with a maximum diameter of 6 cm, extending distally to within 1 cm of the ankle joint. Bone ridges or trabeculae and some calcifications could be seen within the lesion which was well demarcated but without surrounding sclerosis (Figure 2). The radiographic examination was repeated in April 1974 with the same result.

Diagnostic curettage with removal of most of the contents of the lesion was performed in May 1974, because chondrosarcoma was suspected.

Grossly the specimen consisted of adipose tissue fragments and small pieces of bone.

Histologically the material consisted predominantly of mature adipose tissue without atypia as in Case 1. Small bone lamellae without signs of osteoblastic or osteoclastic activity were observed within the adipose tissue. No cartilage structures were found (Figure 3).

The pain did not subside after the operation and a radiologic examination in December 1974 showed the lesion to be unchanged. A further curettage was therefore performed with thorough removal of all the greyish-yellowish contents of the lesion and packing of the defect with autogenous bone grafts.

The *histologic examination* of the curetted material revealed, as previously, mature adipose tissue. Areas of fibrosis and a moderate chronic inflammatory reaction with infiltration of lymphocytes and plasmic cells were also observed, probably reflecting a postoperative reaction.

At follow-up 2 years and 8 months postoperatively the patient, who worked standing and walking all day, complained of moderate aching and swelling of her ankle regions, most noticeably

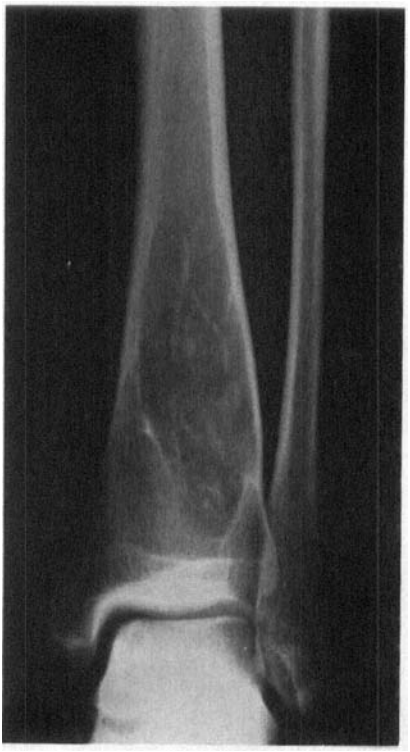

Figure 2. Case 2. Radiograph revealing an osteolytic lesion with some bone ridges and calcifications within the lower part of the right tibia.

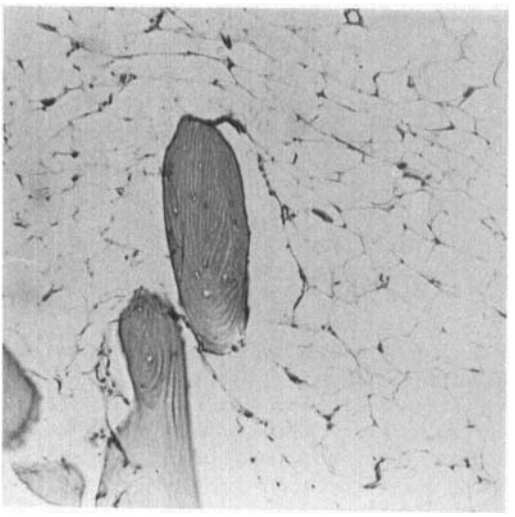

Figure 3. Case 2. Uniform univacuolated fat cells surrounding a few small lamellae of mature bone. H & E ×120.

on the left, operated side. Clinically there was no swelling or tenderness and no restriction of ankle movement. Radiograms showed that the lesion had been replaced by normal bone.

DISCUSSION

Intraosseous lipomatous tumours are rare. Only occasional cases of liposarcoma primarily originating in bone have been described (e.g. Dawson 1955, Catto & Stevens 1963, Goldman 1964). The incidence of lipoma within bone is, according to Dahlin (1970), 1 per 1000 cases of bone tumours. Also intraosseous angiolipomas and paraosteal lipomas have been reported (Salzer & Gotzmann 1963, Krepp 1965). The most common location of intraosseous lipomas is the metaphyseal parts of long bones; including the present two cases, 17 out of 22 cases have been located at such sites. It is interesting that of the remaining five reported patients four presented with a lesion in the calcaneus.

Radiographically an intraosseous lipoma has the appearance of a well-delineated osteolytic lesion within the marrow cavity, sometimes with bone ridges and/or calcifications as in the two cases described above. It is noteworthy that two out of three lipomas in the calcaneus reported previously showed a central sclerotic area as in the present Case 1, which probably corresponded to the regressive changes with deposits of calcium found histologically (cf. Appenzeller & Weitzner 1974, Poussa & Holmström 1976).

The histologic picture in the two cases described here was that of mature adipose tissue, not different from ordinary fat marrow and similar to that of a localized focus of osteoporosis (cf. Dahlin 1970). The diagnosis of intraosseous lipoma can therefore not be based on the histologic appearance alone but must also include clinical information and radiographic appearance.

Curettage and filling of the cavity with cancellous bone seems to be the treatment of choice if the lesion causes pain or a correct diagnosis cannot otherwise be made.

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